

# **Location and Deprivation**

**Towards an understanding  
of the relationship between  
area effects & school health**

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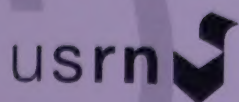
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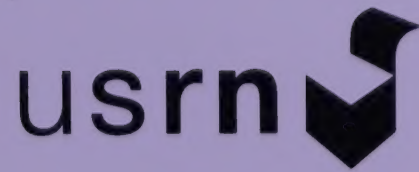
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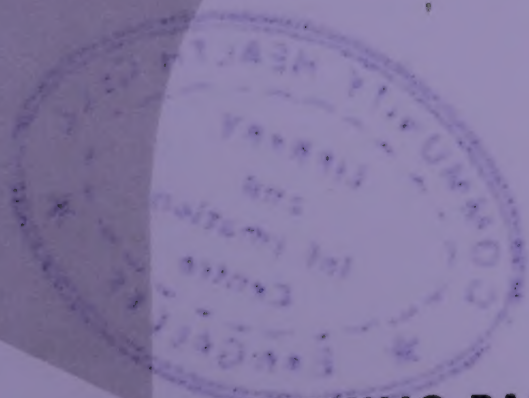
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## The Authors



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# Preface

**The University School Resource Network** is a network of institutions and individuals working towards strengthening equity and quality in education and health. Along with intervention efforts in Municipal Schools, Teacher Education Institutions and Public Health Programmes, research is an important component of all the projects operating within the Network. The understanding is that research and insights from the field should guide intervention as well as advocacy efforts.

**The Working Paper Series** is a medium to disseminate and share research insights from various projects being undertaken through the USRN. We look at this series as a way to generate ideas and engage in academic discussion and to enrich the disciplines of Educational Studies and Public Health.

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**Geetha B. Nambissan**  
[ Coordinator, USRN ]



# Introduction

It is well recognised that the health of children in school-going years has not received adequate attention from public health or educational services. While the contribution of education to health is emphasised, the importance of health for education has not been adequately debated. 'Health' is generally seen in terms of prevention and cure of diseases and in the case of children's health it is restricted to screening for nutritional deficiencies and diseases that leads to the prescription of selective interventions such as de-worming, micro-nutrient supplementation and supplementary nutrition programmes. Current programmatic efforts address only the physical aspects thereby neglecting the emotional, mental and social aspects of child development.

Children's development is shaped by socio-economic contexts in which they live. The socio-economic status of the family is an important determinant in access to basic needs, their residential location and the type of school they go to. Over the last few decades sections of the upper-middle and middle classes have exited from public provisioning and opted to educate their children in the private sector (Deshpande S. 2006; Nambissan 2009). As a result government schools are largely accessed by children belonging to lower-middle and working class homes. Since children attending government (including municipal) schools are drawn from the poorer sections, they reside (more often than not) in settlements that are differentially deficient in infrastructure and services. This paper examines the association between the location of these schools and the availability, quality and experience of infrastructural inputs and service delivery in these selected schools of the South Zone of the Municipal Corporation of Delhi (MCD). We have sought to explain these variations in terms of structural determinants and the extent to which the teachers, parents and the community at large are able to engage and influence the quality of services provided under the rubric of school health services and the midday meal programme.



# Conceptual and Methodological Framework

Historically, the relationship between poor socio-economic conditions and diseases was demonstrated by Villermé in his 1826 study using Parisian data and by Engels in the context of Manchester, England in 1844 (Krieger 2001). These studies demonstrated a strong correlation between poor socio-economic conditions and mortality, largely on account of communicable diseases. With the rise of germ theory in the late 19th century, the association between socio-economic locations and disease was replaced by focus on the individual, germ and disease rather than the social context. This became the dominant paradigm within epidemiology and public health. As a result, dominant approaches within public health tend to focus on individual confounders across social groups rather than the combined effect of the two. However, the concern regarding the relationship between socio-economic inequalities and health continues to be of interest and there are several approaches that have been used to describe and analyse this phenomenon. One of the frameworks that is increasingly being explored is that of looking at – ‘location’ or ‘area’ or ‘place’.

In the social determinants of health framework, Stafford and McCarthy (2006) explored the question ‘does place of residence influence health?’ How can one separate the effect of these contextual factors from the effect of individual risk factors? They listed various characteristics of the determinant ‘location or neighbourhood’ which play a role; including economic deprivation, housing, social context, social cohesion, access to services and amenities and environmental factors. A recent review of multilevel studies concluded that the majority found significant associations between neighbourhood deprivation and health (Diez Roux et. al. 2001; Diez Roux 2005). Studies have also shown a positive association between perceived health status and access to health services and amenities in the neighbourhood. The place or area effect is a framework to capture the combination of individual and socio-economic factors in explaining variations in health status within a given population. Building on the conceptualization of MacIntyre et al. of place or area effects on health, we identify three types of explanations for geographical variations in health: compositional, contextual, and collective (Macintyre S. et.al. 2002). Compositional explanations draw our attention to the characteristics of individuals concentrated in particular places; contextual explanations draw to opportunities and structures in the local physical and social environment which includes infrastructural inputs, access to amenities and the power dynamics of communities. The collective emphasises the importance of shared norms, traditions, values, and interests, and thus adds an anthropological perspective to the socioeconomic, psychological, and epidemiological perspectives often used to examine area effects on health.



# Methodology

The present paper uses this framework of area effects to explore variations in the socio-economic locations of schools and related variations in infrastructural and programme delivery. Methodologically, two distinct steps were necessary. The first was regarding school and area selection. Studies that deal with the determinant of location and social-economic aspects of context often grapple with the question of how do you demarcate different areas or neighbourhoods? For our study this question relied on understanding larger variations in settlements and services across Delhi focusing on the South Zone of the Municipal Corporation of Delhi (MCD). The division based on types of settlements and their legal as well as socio-economic conditions offered us a canvas where we could explore areas exhibiting different grades of poverty. Therefore schools were selected based on the larger type of area or location they were embedded in. A typology or division of areas was used which demarcates different types of settlements – planned government colonies, resettlement colonies, urban villages, slum colonies, unauthorized colonies and rural periphery villages (Dasgupta R. 2010). We selected schools and areas to represent each of these different settlement types.

The second methodological question was how these area effects will be measured as impacting school health? The research conceptualises the school as representing the area it is embedded in. To understand the area effects on health mediated through the school we decided to select factors producing 'health' in a school. Basic infrastructure and programmes that deal with health within a school were selected as factors. Issues like water, toilets and playground are essential elements that impact the health of children. These factors were seen as pathways to understand how the area effects get mirrored. To explore variations across the areas and schools we devised a methodology of assigning scores. It was not sufficient to ask the question is there a toilet in a school? We needed to clearly unpack each factor; therefore the questions also included – Is the toilet functional? Is there water? Is it separate for boys and girls? This set of parameters was developed for each factor and through careful observations over a number of days in each school as well as through interviews with teachers and children these scores were allocated. The idea was to observe finer issues like access to amenities, utilization, availability of resources and the culture around their utilisation and distribution. These scores are numerical figures however it is important to state that they are trying to explore qualitative dimensions of school health and area effects. While they do facilitate a comparison between schools they also help us understand the intra or within school qualitative dimensions of health infrastructure and health programmes. These scores and insights emerging were then analysed against the area context and issue of social composition and 'voice'.



The contextual, compositional and collective factors conceptualised for this study are summarised as follows<sup>1</sup>.

Contextual Factors	
<ul style="list-style-type: none"> <li>• Housing / residence type of the area</li> <li>• Human resource (teaching and non-teaching)</li> <li>• Provision / availability of public utilities</li> <li>• Playground / open space in schools</li> <li>• Schools (government and private)</li> <li>• Availability of vehicles in the school health programme</li> <li>• Location of schools</li> </ul>	<ul style="list-style-type: none"> <li>• Roads leading to school</li> <li>• School buildings</li> <li>• Availability of drugs, equipment at the zonal clinic</li> <li>• Water supply in school</li> <li>• Teachers residing in the area where the school is located</li> <li>• Sanitation and sewerage services in school</li> </ul>

Compositional Factors
<ul style="list-style-type: none"> <li>• Nature of employment / livelihood structures of families</li> <li>• Income profile of parents</li> <li>• Proportion of working class families</li> <li>• Employment status of women</li> <li>• Educational level of parents</li> <li>• Reasons for sending children to that particular school</li> </ul>

Collective Factors
<ul style="list-style-type: none"> <li>• Perceptions of doctors towards schools and school children</li> <li>• Sense of alienation among teachers</li> <li>• State of functioning of the Parent Teacher Association (PTA)</li> <li>• Perceptions of teachers towards the School Health Programme (SHP)</li> <li>• Perceptions of teachers towards Health and Physical Education</li> <li>• Integration / social support among residents in that area</li> <li>• Social cohesion and networking among teachers</li> <li>• Perceptions of doctors, Pubic Health Nurses (PHNs) towards their Department</li> </ul>

1 This table is based on the conceptualization provided in Macintyre S. et al (2002).



# School and Area Selection

This study was conducted in the South Zone of the Municipal Corporation of Delhi which is among the larger zones of the MCD. While a few colonies were set up for rehabilitation of the Partition refugees, most of the urban expansion occurred since the 1970s. Affluent colonies, office complexes, markets, hospitals and academic institutions are the hallmark of this zone along with good roads and public transport. There was investment in household industries and real estate (for sale as office space or tenancy for residence). With the corporate sector setting up offices in the large office complexes, the tertiary sector boomed in this zone, more so following the liberalisation of the economy in the 1990s. At the same time the zone consists also of settlements which are predominantly working class habitations and often slum areas and unauthorised colonies. The population density in South Zone was 4237.29 per sq. km. in the 2001 Census. In terms of area, about two-thirds of South Zone consists of rural villages. The population density of the urban areas of South Zone is therefore much higher.

As in other zones of Delhi, there are distinct settlement patterns that represent variations in socio-economic, legal and infrastructural conditions. According to the Municipal Corporation of Delhi, the settlement patterns are as follows:

- Planned colonies
- Unauthorised colonies
- Regularised colonies (which were unauthorised to begin with)
- Slums / JJ clusters
- Resettlement Colonies
- Urbanised villages
- Villages (rural)

The schools were purposively chosen to represent the different settlement patterns and reflect variation in socio-economic contexts.

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2 It is important to mention that in the findings and discussion we have used the name of the area as a substitute for the name of the school. The name of the area represents a kind of settlement type and socio-economic context explained in the tables. We have avoided using the complete name and address of the school to ensure anonymity to the school staff and children.



Location of school <sup>2</sup>	Socio-economic context	Boys / girls / coed	Number of children
<b>Mehrauli</b> regularized colony	Children of unorganised sector workers and predominantly Muslim	<b>Boys</b> (Morning shift)	700 approx.
<b>Sangam Vihar</b> unauthorised colony	Economically distressed population, unorganised labour	<b>Girls</b> (Morning shift)	1200 approx.
<b>Chandan Hula</b> rural area	Mixed village of mainly Muslim and Gujjar population	<b>Coed</b> (Morning shift)	400 approx.
<b>R.K. Puram</b> planned govt. colony	Children of Class IV employees, small shopkeepers and petty business people	<b>Girls</b> (Morning shift)	408
<b>Devli Gaon</b> urbanized village	Children of unorganized sector workers and migrant population	<b>Boys</b> (Afternoon shift)	482
<b>Ambedkar Nagar</b> resettlement colony	Older settlement of migrant workers	<b>Coed</b> (Morning shift)	424
<b>Kusumpur Pahadi</b> slum colony	Children of migrant workers and 3/4ths are from SC and OBC communities	<b>Girls</b> (Morning shift)	485



# Variations in Compositional Characteristics

There is a clear difference in socio-economic status of children attending the government schools across settlements. Children in the Mehrauli School were mostly of parents who worked in the unorganised labour force. There were many children whose parents tried to find manual work here but also did small farming in their village and so lived a life on the border of a rural livelihood and an urban workforce. This meant they often went back to their villages causing breaks in the children's academic year.

The urban settlement of Kusumpur Pahari comes under the category of a Slum Colony or JJ Colony and has had evolved over the years mainly through a process of migration and networking of poor families from the relatively more backward regions of some states in India. The issues related to schooling of the children to a large extent are linked to the social and economic context of the communities to which the school caters to. The schools in this area were originally established to cater the need of families of the two residential colonies in which they are located. Over time, parents living in the colonies began to send their children to the private ('public', in local parlance) schools; at present the MCD school caters primarily to children from the poorer settlements, located at the fringes of these colonies. We selected the The children attending this school all came from the Kusumpur Pahari slum.

Sangam Vihar is the largest unauthorised colony in Delhi and has a heterogeneous character. It has a diversity of constructions from pucca builder flats to semi-pucca, small one-room hutments and also kutcha huts. In some parts of the colony people are staying on small squatters with just plastic sheets held up and some people are living on garbage dump sites as well. We closely surveyed the area and selected a school from one of the poorest parts of Sangam Vihar. The school chosen is located on slightly raised ground. We sampled the Morning shift (Girls). It is a large school with about 1500 children.



Ambedkar Nagar is an urban resettlement colony set up during 1976. In the school selected from here 50% of each section consisted of girl students and Muslim students have a population of about 15% of the total students in a class. The Scheduled Castes constitute about 11% of the students. Due to economic hardships faced by the parents, the teachers reported that students often did not have their own, books and pencils and it was the teacher who arranged materials for the children.

Students of the Devli School generally resided within the Deoli village and also in the nearby unauthorised colonies of Durga Vihar and Sainik farm. Most of the parents of the children were daily wage labourers or self-employed. They were mostly migrants from Bihar and Rajasthan and some of them were also from the southern states. About 15% of the students were Muslims, while 3% of the students belonged to the scheduled castes. The teachers reported that, because of the absence of adequate number of teachers, one teacher has to take care of 100 children at a time and it becomes very difficult for them.

Chandan Hula is a rural village on the periphery of the South Zone. Some of its adjacent neighbourhoods are rapidly urbanising. However, it still retains certain social characteristics of a village as well as village level institutions. The school is co-educational. There were three private schools and the better off, Gujjar children mostly went to private schools. Children of the Muslim community and the migrant settlers were enrolled in the municipal school.

R. K. Puram School had students coming from Munirka, an urbanised village as well as from R. K. Puram a large central government residential colony. Many of the issues mentioned in other area descriptions such as Sangam Vihar or Devli, relating to sanitation, water supply, electricity and roads were not problems in this area. Being a legal and government colony the area and school displayed the highest strength of 'voice'.



# Variations in Contextual Factors

In this section we present the data and discuss variations across schools for each of the parameters probed. The table of scores for each parameter is presented first followed by a discussion.

TABLE 1. LOCATION SCORE							
School No. Location	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Legal Status of Colony	1	2	2	2	2	2	1
Physical Access for beneficiaries	1	1	2	1	2	2	2
Physical Access for Programme + Staff	1	1	2	2	2	2	2
Time Taken from nearest bus stop	1	3	3	2	2	2	2
Availability of piped water supply	1	2	2	2	2	2	1
Availability of sewerage systems in the area	1	2	2	2	2	2	1
Availability of electricity in the area	2	2	2	2	2	2	2
Water logging	1	1	2	1	2	2	1
School away from busy/noisy place	2	2	1	2	1	2	2
Fence/wall of adequate height	1	1	1	1	1	2	2
SUBTOTAL	12	17	19	17	18	20	16

## SCORING SYSTEM

Legal status of the colony	- Legal=2	Illegal=1
Physical access for beneficiaries	- Convenient=2	Inconvenient=1
Physical access for programme + staff	- Convenient=2	Inconvenient=1
Time taken to walk from the nearest bus stop	- ≤ 5min=3	6-9min=2, ≥10min=1
Availability of piped water supply in the area	- Available=2	Not Available=1
Availability of sewerage systems in the area	- Available=2	Not Available=1
Availability of electricity in the area	- Available=2	Not Available=1
Water logging	- Yes=1	No=2
School land as per norms	- Yes=2	No=1
School Away from busy/noisy place	- Yes=2	No=1
Fence/wall of school of adequate height	- Yes=2	No=1
SCORE RANGE	- 23-11	



# Location

Sangam Vihar is at the lowest level with poor living conditions with basic needs not met by the State. The issue of water supply is grave in Sangam Vihar and especially so in Kusumpur Pahari. This has adversely affected children's attendance. In Kusumpur Pahari children were often absent based on the tanker timings. Water logging and sewerage systems in the area are serious concerns in these two areas. Sewerage and sanitation is a problem across areas except in R. K. Puram. All this is likely have a serious impact on health conditions (See Table 1).

Physical access was difficult for staff and children in Devli and Sangam Vihar. In Chandan Hula, the access during the rains was difficult as the approach road from the bus stop to the school got completely flooded. The Mehrauli School was located in a noisy market place, in front of a temple. The other serious problem in Mehrauli School is the fence or boundary wall. The menace of monkeys was aggravated with the presence of a low wall. Children were often scared to play in the open and go to the toilet alone because of monkeys on the prowl. The principal and staff have used school funds to put grills so that the monkeys cannot enter all corridors but still the ground floor is accessible. Repeated attempts to address this issue with local Municipal Councillors have failed. The school had requested that the fruit market be moved ahead away from the school as the monkeys were attracted.

In Devli and Ambedkar Nagar schools, the boundary wall was not of adequate height and children often jumped out. Severe water logging in Devli School area often required that the children jump since the entrance would be flooded. In Sangam Vihar too low boundary was an important issue; the girls reported about the boys' eve-teasing from across the wall.



TABLE 2. BUILDING SCORE							
School No. Building	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Old or renovated	2	2	2	1	2	1	2
Damage and cracks	1	2	1	1	1	1	2
Gate	1	2	1	2	2	2	2
Painted/permanent exterior finish	2	2	2	1	2	2	2
Staircase Safety	1	1	1	NO STAIRS	1	2	1
Cleanliness	1	3	2	1	2	3	1
Dustbins in common areas	1	1	1	1	1	1	2
Fire Exit situation	1	1	1	2	1	2	1
SUBTOTAL	10	14	11	9	12	14	13

SCORING  
SYSTEM

- Old or renovated

Damage and Cracks

Gate

Painted / permanent exterior finish

Staircase

Cleanliness-

Dustbins in common Areas

Fire exit Situation

- Old=1

- Yes=1

- Yes=2

- Yes=2

- Safe=2

- Good=3

- Yes=2

- Safe=2

Renovated=2

No=2

No=1

No=1

Unsafe=1

Average=2

No=1

Unsafe=1

Bad=1



# Building

Both R. K. Puram and Chandan Hula schools were the highest ranked. Chandan Hula being in a village had a relatively larger campus for its student strength and the building was kept clean. R.K. Puram had a beautiful old style building and was very clean. Since the roof was not cemented, under the new plans of the MCD, all such old structures are being pulled down and new double storied buildings constructed. There was a mixed response to this up gradation plan. Many teachers felt that the old building with new roofs would have sufficed (See Table 2).

Devli had the lowest score and the structure was in urgent need of repair and reconstruction. The building was run down and not conducive to holding classes. Animals often strayed into the classroom. The gate had been recently repaired after it had fallen on a child and caused him injuries. The building of the Ambedkar Nagar School was double storied and the staircase was in a state of disrepair with students often getting hurt. Sangam Vihar currently has a large building. For several years this school was housed and run in tents. The current building is a new structure but maintenance is poor and it was found to be generally dirty.



TABLE 3. PLAYGROUND SCORE							
School No. Playground	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Is there a playground?	2	2	1	1	2	2	2
Adequacy for the number of children	2	2	1	1	2	2	2
Cleanliness	1	3	1	1	2	3	2
Safety of surface	2	2	1	2	2	2	2
Greenery	1	2	1	1	1	2	2
Cleanliness	1	1	1	1	1	2	1
Play equipment	1	1	1	1	1	2	1
Is it well maintained?	—	—	—	—	—	2	—
Physical Education Period	1	2	1	1	1	2	1
Teacher supervision during play	1	2	1	1	1	2	1
<b>SUBTOTAL</b>	<b>13</b>	<b>17</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>21</b>	<b>14</b>

SCORING  
SYSTEM

- Is there a playground?

- Yes=2      No=1
- Adequacy for the number of children

- Yes=2      No=1
- Cleanliness

- Good=3    Average=2    Bad=1
- Safety of surface

- Grass=3    Kuccha=2    Concrete=1;
- Greenery (non-grass)

- Yes=2      No=1
- Play equipment

- Yes=2      No=1
- If yes, is it well-maintained?

- Yes=2      No=1
- Physical Education period

- Yes=2      No=1
- Teacher supervision during Play

- Yes=2      No=1



# Playground

The issues of playground and physical education also showed significant variations. Highest scores were for R. K. Puram and Chandan Hula Schools. R. K. Puram School had a playground, at par with many affluent private schools of the city. It had swings and play equipment which were well-maintained. Among the sampled schools, only this school had a physical education teacher; other schools did not have even have a sanctioned post. In Chandan Hula School, the principal and teachers emphasised play and sports and coached them to participate in inter-school MCD events (See Table 3).

In Mehrauli School for Boys, the desire to play was immense but the area was small and the surface unsafe. Devli had the lowest overall infrastructure and there was no playground. In Ambedkar Nagar School there was no playground and the children used a long patch of land (half cemented) as their playground. This increased their chances of getting hurt while playing. In all schools except R.K. Puram and Chandan Hula, there was no separate time scheduled for games.



TABLE 4. TOILET SCORE							
School No. Building	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
As per norms?	1	2	1	1	1	1	1
Separate for boys and girls?	2	2	2	2	2	2	2
Water supply in toilets	1	2	1	1	2	2	2
Cleanliness	1	2	2	1	2	2	1
Functional or not	1	2	2	1	2	2	2
Latrine Locked? Access	1	2	2	1	2	2	2
<b>SUBTOTAL</b>	<b>7</b>	<b>12</b>	<b>10</b>	<b>7</b>	<b>11</b>	<b>11</b>	<b>10</b>

SCORING  
SYSTEM

As per norms? (i.e. 1 urinal for 60 children 1 latrine for 100 children)	- More=3	Adequate=2	Inadequate=1
Separate for Boys and Girls	- Yes=2	No=1	
Water Supply in Toilets	- Yes=2	No=1	
Cleanliness	- Good=3	Average=2	Bad=1
Functionality	- Functional=2	Non-functional=1	
Latrine Locked? Accessibility	- Yes/Inaccessible=1	No/Accessible=2	



# Toilets

Toilets showed a dismal situation across schools; this is a matter of serious health concern, child rights and dignity. Access to clean, safe and functioning toilets is a basic prerequisite for a school. In Sangam Vihar School toilets had been constructed, however a lack of water in the school (since it was an unauthorized colony) made the toilets non-functional. The girl students in the morning shift highlighted this as a source of anxiety. They had to use the garbage dump outside the toilets to relieve themselves. The low boundary wall meant that there was no modicum of privacy. Classrooms in this corner of the school were also affected on account of the stink that pervaded making it difficult to teach and learn (Table 4).

There were no functional toilets in Devli School. This was a problem for the teachers as well. One functional was used by the morning shift teachers and key kept by them. In Kusumpur Pahari School, toilets were a public health hazard as they were unclean and the septic tank full. Children were forced to use the dirty toilets; at times they sneaked out into the bushes of the playground as it was nearly impossible to use the dirty toilets.

In Chandan Hula the situation was considerably better as the toilets were functional and cleaner. The Principal took extra care about all aspects of cleanliness and there was a permanent *safai karamchari*. There are functional toilets in Ambedkar Nagar School for both boys and girls and adequate water was available.



TABLE 5. DRINKING WATER SUPPLY SCORE							
School No. Drinking Water	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Piped water supply	1	2	1	2	2	2	1
If No, any other safe source?	2	—	2	—	—	—	2
If Yes, is it adequate?	1	2	1	1	2	2	1
Are teachers drinking from the same source?	1	1	1	1	1	1	1
SUBTOTAL	5/8	5/6	5/8	4/6	5/6	5/6	5/8

SCORING  
SYSTEM

Piped Water Supply	-	Yes=2	No=1
If No, any other safe source?	-	Yes=2	No=1
If Yes, (drinking water from any safe source) Adequate?	-	Yes=2	No=1
Are teachers drinking from the same source?	-	Yes=2	No=1

# Drinking Water Supply

Chandan Hala and R. K. Puram Schools had good water supply. The unauthorised colony of Sangam Vihar and the slum cluster of Kusumpur Pahari have severe water crisis, as is the situation in these schools. In R.K.Puram and Chandan Hala, water supply was through piped sources, and regular in frequency. In Mehrauli School (located in an urbanised village), water shortages were severe and water supply was once every few days and the school stored it in a tank, which was not cleaned regularly. Kusumpur Pahari also had a similar situation with water stored in tanks and often running out. In Ambedkar Nagar School, drinking water was available. In Devli School, piped supply was only at around 4 p.m. so during the entire day there is no water for drinking. Often students are forced to drink the water from the tank which becomes very old, dirty and unsafe (See Table 5).

Water availability for hand washing after toilet usage and before and after the midday meal and to wash the plate after the meal was also a problem. Finally, the point where all variations disappeared was the parameter of whether the teachers and school staff drank from the same source. This was an important way to gauge the perceived level of safety and cleanliness of the water. Across schools, no teacher drank water from the water source of the school. In fact, this issue of attitude, sensitivity and distance between the teachers and children as seen in the case of toilets was also seen with sharing the water source. Issues of class and purity-pollution and the idea that the water was unfit for consumption because in the teachers' perception 'unclean' children were using it do seem to operate.

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TABLE 6. CLASS ROOM SCORE							
School No. Class Room	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Leakages	1	2	2	1	1	2	1
Walls whitewashed	1	2	1	1	1	2	2
Furniture Adequate	2	2	1	1	2	2	2
Condition of Furniture	1	2	2	1	2	2	2
Cleanliness	1	3	2	1	2	3	2
Lights	1	2	1	2	2	2	2
Fans	1	2	2	2	2	2	2
Dustbin	1	2	1	1	1	1	1
Windows	2	2	2	2	2	2	2
Window Panes	1	2	1	1	1	1	1
Natural Lighting	1	2	1	1	1	2	2
Ventilation	2	2	1	1	1	2	2
<b>SUBTOTAL</b>	<b>15</b>	<b>25</b>	<b>17</b>	<b>15</b>	<b>18</b>	<b>23</b>	<b>21</b>

SCORING  
SYSTEM

- |                           |           |                 |
|---------------------------|-----------|-----------------|
| Leakages                  | - Yes=1   | No=2            |
| Walls whitewashed         | - Clean=2 | Dirty=1         |
| Furniture adequate        | - Yes=2   | No=1            |
| Condition of furniture    | - Good=3  | Average=2 Bad=1 |
| Cleanliness               | - Good=3  | Average=2 Bad=1 |
| Lights                    | - Yes=2   | No=1            |
| Fans                      | - Yes=2   | No=1            |
| Dustbin                   | - Yes=2   | No=1            |
| Windows                   | - Yes=2   | No=1            |
| Natural Lighting adequate | - Yes=2   | No=1            |
| Ventilation adequate      | - Yes=2   | No=1            |

# Class Rooms

R.K. Puram, Chandan Hula and Mehrauli Schools did not have any classrooms with leakages whereas all other schools did. Mehrauli did not have adequate furniture in some classes and children often sat on the floor or shared a table. Similar was the case for Devli School. Ventilation in Mehrauli, Devli and Ambedkar Nagar was lacking and natural light in the classroom was insufficient.. Sangam Vihar School did not have fans in the classroom. The only school to have glass in the windows was Chandan Hula. Therefore in a classroom in Sangam Vihar summers were hot with no fans to provide relief and winters were too cold with no windows to shut. Rain water entering the classroom through these open windows was also a problem (See Table 6).

Classes also get very dusty and dirty and cleanliness was an issue especially in Sangam Vihar, Mehrauli and Devli Schools. In Chandan Hula and R. K. Puram the classrooms were markedly cleaner. Children were often involved in the cleaning process with the teacher as was also in the case of Kusumpur Pahari school or sometimes they just have to manage on their own, using their hands or handkerchiefs to clean as in Sangam Vihar. Chandan Hula was the only school that had dustbins in the classrooms.



TABLE 7. MIDDAY MEAL SCORE							
School No. Building	1 Sangam Vihar	2 Chandan Hula	3 Mehrauli	4 Devli Gaon	5 Ambedkar Nagar	6 R.K. Puram	7 Kusumpur Pahari
Quantity	1	1	1	1	1	2	1
Taste	2	2	2	2	2	2	2
Arrival on time	2	2	2	2	2	2	2
Hot	2	2	2	2	2	2	2
Teachers taste or check food	2	2	1	1	2	2	1
Teachers supervise	2	2	1	1	2	2	2
Adequate personnel to Distribute	2	2	1	1	1	2	1
Process of distribution	2	2	1	2	3	3	2
Quality	2	2	2	2	2	2	2
Nutritional adequacy	2	2	2	2	2	2	2
Washing facility	1	2	2	1	2	2	2
Disruptions/delays in supply	2	2	2	2	2	2	2
Parents involvement in MDM	1	2	1	1	1	1	1
Re-supply and feed- back procedures used by principal	2	2	2	2	2	2	2
Children serving	2	2	1	2	2	1	1
<b>SUBTOTAL</b>	<b>27</b>	<b>29</b>	<b>23</b>	<b>24</b>	<b>28</b>	<b>29</b>	<b>25</b>

SCORING  
SYSTEM

Quantity	- Sufficient=2	Insufficient=1
Taste	- Good=3	Average=2    Bad=1
Arrival on Time	- Yes=2	No=1
Hot	- Yes=2	No=1
Teacher's Taste/Check Food	- Yes=2	No=1
Teacher's Supervise	- Yes=2	No=1
Adequate Personnel to Distribute	- Yes=2	No=1
Process of Distribution	- Good=3	Average=2    Bad=1
Quality	- Good=3	Average=2    Bad=1
Nutritional Adequacy	- Good=3	Average=2    Bad=1
Washing Facility	- Yes=2	No=1
Disruptions/Delays in Supply	- Rare=2	Frequent=1
Parents Involvement in MDM	- Yes=2	No=1
Re-supply and Feedback Procedures used by principal in case food spoilt or insufficient	- Yes=2	No=1
Children Serving	- Yes=1	No=2

# Midday Meals

In the south zone there were only two Non-Government Organizations – Ekta Shakti Mission and JayJee Humanitarian Society that have been accorded the contract to supply hot cooked meals to the schools. There were variations across schools but there also seemed to be a lot of common or similar scores. In the matter of quantity, there was a shortage across schools. No children went without food but the amount of food served did not satisfy them, especially the older children. It was found that many children would come back for second helpings and had to return either with just a little more, or with empty plates (See Table 7).

The quantity of food given across classes and systems of distribution varied in schools.

In Sangam Vihar, all children across classes were given the same amount with improvised measures based on number of ladles of dal/vegetable/ rice. In Mehrauli, the school tried to vary the amounts across classes giving more to the higher classes. The distribution was done in Mehrauli in ascending order of the class starting from the nursery section. Classes 3 and sometimes 4 would get rationed food as by this time those serving had to make sure enough was remaining for class 5. It is children from these classes in the middle (3 and 4) that were actually getting the worst deal in terms of quantity.

In R. K. Puram food was not in short supply. Observations suggested that the number of cans being supplied was more in comparison and students often took second helpings. Teachers were involved and the entire school has a festive mood when the mid day meal was distributed. The senior students generally distributed the meal.

In Devli school there was apathy and neglect. In Ambedkar Nagar one helper was appointed by the NGO and she was assisted by one or two senior students. The teacher in-charge was always around while the meal is distributed.

...



...

In all areas food reached on time and was always hot. Food was found to be clean and fresh most of the times but at times in our observation periods we found that pooris were hard and rubbery/stale or that rice was old and fermented. In all except two schools the teacher representatives did check/taste/eat the food. In Mehrauli, Devli Gaon and Kusumpur Pahari schools, the involvement of the teachers was lower and they did not partake or taste the food. On the other hand in a relatively poorer unauthorized colony school of Sangam Vihar, there was a proper system of checking. Teacher supervision was absent in Mehrauli and Devli schools. In all other schools there is some level of participation and supervision during the distribution process.

The process of distribution was also important and saw variations across schools relating to the efficiency as well as the culture of the programme. In Sangam Vihar school, the NGO in charge had employed six women of the area to come and distribute the food. In Mehrauli School, a single person (the woman working

in the school was given the responsibility and wage by the NGO) could not manage and lunch time saw a lot of confusion and jostling and shouting; unequal and arbitrary amounts were served. In R. K. Puram the system was efficient and smooth. In Kusumpur Pahari too teachers helped in the distribution and food was distributed at different points for different classes. Parents' involvement was observed in Chandan Hula school and the issue of quality was addressed in parent Teacher Meetings.

# Discussion

This paper has demonstrated associations between varied area effects on availability of infrastructural inputs in the school and programme responsiveness. The evidence suggests that the contextual, compositional and collective factors are interconnected which determines programme responsiveness. In order to demonstrate the variations, we draw on two schools – R K Puram and Devli that represent two ends of the spectrum. The former is located in a planned colony for central government employees and the latter an urbanised village with unauthorised extensions. We have identified the key determinants of responsiveness, that include the location of the school, the physical environment, social background of the programme providers, teachers' attitude towards children and the extent of social distance teachers, healthcare personnel and communities in each of these locations.

There were major differences in physical environment of the two schools. R. K. Puram School was more organised with adequate space, playgrounds, furniture, lights and fans. Devli School was in a dilapidated condition lack in all these basic amenities, including drinking water and toilets. The road leading to the Devli School was unpaved and in a state of disrepair. Most parents of children attending the Devli School were not aware of the School Health Services (SHS). This was quite in contrast to the situation in R.K. Puram School, one of the critical reasons certainly being the frequency of the SHS visits.

Perceptions of doctors and nurses of the SHS towards the programme were affected by location of the school, transport, sanitation, school building and provision of water and toilets in school – all of these contextual factors. The involvement of teachers in various programmes, including the midday meal, was considerably more in R.K. Puram than in Devli village. This might be attributed to the fact that R.K. Puram School provided for adequate space and organisation to deliver the midday meals and school health activities. Space constraint in Devli meant quite the contrary.



R.K. Puram School teachers had relatively high self esteem about being posted in this coveted school. Most teachers in Devli School, with the exception of those residing in nearby areas, were not motivated to teach in that school. Especially, the younger teachers hardly identified themselves with the school, since they never 'opted' for it, which was in contrast to the teachers in R.K. Puram School. There was more social cohesion and networking in the R.K. Puram School compared to the Devli School. There was a 'voice' articulating demands in R.K. Puram School particularly with parents being active in Parent Teacher Association meetings. In contrast, parents hardly entered the school premises in Devli even while dropping or picking up their children.

The central insight that seems to come out of our data and observations is the issue of 'voice'. The 'Voice' that a community has, intertwined with and affected by the socio-economic status impacts the access to services and the ability to demand these as a right. R. K. Puram School is at one end of the spectrum with children coming from better off families. The location of the school, in a planned colony gave it a significant advantage and showed a positive association between location and school health. Issues of water logging, access, electricity etc. seem to automatically be taken care of. On the other hand in a place like Sangam Vihar or Kusumpur Pahari water logging, water availability are all daily struggles. The starting position then is differential and marked by disadvantages for some and in varying degrees. It was interesting to see that Devli MCD School though located in an urban village which has people who were erstwhile landowners and who continue to be wealthy had very little strength of 'voice'. Sangam Vihar being an unauthorized colony displayed a greater strength of 'voice'. This led us to the analysis that it is the differentials and level of social inequalities or the gap that made a difference. In Sangam Vihar a large population of the poor is being catered to by this school. Devli is an urbanised village and here the relative inequality between the landed and the migrant labourer settlers is greater. It is only the poorest here who send their children to the MCD schools and they formed a small share of the community and have a smaller 'voice' to influence the functioning of the school and health programmes.

A nuanced observation helped the authors see that though socio-economic contexts played a role often the issue of voice and the level of services offered was dependent on other factors as well. As in the case above it was the level of inequalities and who actually used the school within an area that made the difference. Similarly though Chandan Hula lies at the

furthest end, certain characteristics particular to a village set up actually helped it's functioning along with a dynamic staff and principal.

In conclusion one finds that this study has explored the relationship between location, deprivation and health and this conceptualisation of area effects has been extended to delivery of health programmes in school as well to studying school health infrastructure. Two broad findings emerged- the first being that variations in school health infrastructure- its availability and functionality are associated with an area typology or settlement types. Poorer and deprived locations reflected this deprivation in school health infrastructure as well. Basic minimum aspects of health in school such as availability of drinking water, functioning of toilets, a place to play, clean classrooms etc were lacking in various degrees across sample schools. The second insight is related to the issue of voice and here too one finds that location and relative inequalities made it difficult for parents and teachers to articulate a demand for a greater responsiveness of health programmes and health infrastructure. Collective social functioning may influence health programmes in different ways. The 'same' programme is thus recast in somewhat diverse avatars across socio-economic and location contexts within a municipal zone.



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# Notes







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